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ABSTRACT

The Primary Reading Program was initiated in 117 classrooms in 40 North Carolina schools, to improve the reading achievement of the primary school students. The same number of control classrooms were also selected for comparison. Features of the program included increased funding for instructional materials; use of volunteers and teacher aides for small group and individualized instruction; staff development; comprehensive testing and interpretation of results; and availability of reading consultants. Effects of the program were assessed using pretests and post tests of the Comprehensive Tests of Basic Skills and the Prescriptive Reading Inventory; results of the first year of testing indicated positive program effects. Evaluation continued through the second year, as program and comparison classes completing grades one and two were continued in corresponding program or comparison classes in grades two and three. Post testing in March of the second year revealed that the classes participating in the program scored significantly higher on both tests over the 15-month period than their counterparts in the comparison classes. Scores for first-grade students who were in the program for five months were not statistically different from those of comparison group students. (Author/GDC)

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NORTH CAROLINA primary reading program evaluation 1977

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DIVISION OF RESEARCH/ NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION

PRIMARY READING PROGRAM EVALUATION
FINAL REPORT

June 1977

OVERVIEW

In August 1976, results of the first-year interim evaluation of the Primary Reading Program were presented to the State Board of Education. This follow-up report will present the results of the program for five months of instruction for first graders for the 1976-77 school year and fifteen months of instruction for second and third graders who were program participants in both the 1975-76 and 1976-77 school years.

The pilot program began in September 1975, with 2.75 million dollars appropriated by the General Assembly for the improvement of reading achievement in the primary grades in North Carolina. During the first year, $750,000 were spent to implement the program and its evaluation in 40 schools with 117 classes throughout North Carolina. The same schools contained an additional 117 classes that were used as comparison classes in the evaluation. The remaining two million dollars funded the initial schools and classes plus 288 classes in 64 new schools for the second year. This report is limited to the results of the initial 40 schools and 117 classes.

FUNDING

The Primary Reading Program funds were allocated for:

- INCREASING the resources available to teachers for supplies and materials. Supplies and materials were provided at a cost of $5.70 per student in excess of the regular state and local allotment for supplies and materials. These materials were used to supplement already available resources.

- PROVIDING a teacher assistant (aide) to follow up reading activities with small groups or individual students. An aide was provided for each classroom and, along with the teacher, received training in reading.

- PROVIDING staff development which emphasized effective practices in teaching reading. Before the implementation of the program, teachers, aides, and principals were involved in a week of regional inservice training with all the benefit classes in their region. Ongoing inservice training continued throughout the school year within the specific administrative units. Under the staff development efforts, teachers used their judgment in selecting appropriate approaches and methods for teaching reading to each child. Most teachers elected to use a variety of strategies for each child depending upon the student's level of development.

- PROVIDING for comprehensive testing and assistance in the interpretation and use of test results. Monies were appropriated for diagnostic instruments and services, evaluation, and materials. Individualized test results were made available to principals, teachers, and parents.

- PROVIDING each child with individual attention from adult volunteers. Principals implemented the volunteer component of the reading program. The principals recruited, supervised training, and set operational procedures for the volunteers' work in the classroom. Volunteers received training from the teacher and aide as they worked in the classroom.

- INCREASING the consulting services for reading. Participating classrooms were visited periodically by local school district reading specialists and regional education center reading consultants. Following each visit, the consultants reviewed the program and made written recommendations to the principals.

PARTICIPANTS

Schools were selected from application forms submitted by superintendents and principals to the Department of Public Instruction's Division of Reading. These applications contained information on certain general requirements which were necessary for acceptance into the program. After the commitment of the local agency was reviewed, the Division of Reading chose the schools to participate in the program in a manner which divided the schools as equally as possible among the State's eight education regions.

INSTRUMENTATION

Effects of the program were measured by administering two types of reading achievement tests to both the benefit and comparison groups. The first instrument contained the reading sections of the nationally normed Comprehensive Tests of Basic Skills (CTBS). The levels appropriate for grades one, two, and three were selected, administered, and scored to obtain standard scale scores, percentiles, and grade equivalent scores. The second test, the Prescriptive Reading Inventory (PRI), included levels which were appropriate for second and third graders. The PRI is a nationally developed test which identifies and measures a large number of skills necessary for reading. Both tests indicate how well each child has learned these basic skills. The three groups of students took the following series of tests during the two-year evaluation period:

Grade 1 is the designation given to students who began the program in the first grade during 1976-77. These students were administered the CTBS, Level A as a pretest in September 1976 and CTBS, Level B as the posttest in March 1977. Thus, there were five months of instruction between the pretest and the posttest.

Grade 1-2 is the designation given to students who began the program in the first grade during 1975-76 and continued in the program in the second grade during 1976-77. These students were administered the CTBS, Level A as a pretest in October 1975; the CTBS, Level B as an intermediate posttest during May 1976; the PRI, Level Red as an intermediate test in September 1976; and the CTBS, Level C and the PRI, Level Red as posttests in March 1977. For this group there were fifteen months of instruction between the October 1975 pretest and the March 1977 posttest.

Grade 2-3 is the designation given to students who began the program in the

second grade during 1975-76. These students were administered the CTBS, Level C and the PRI, Level Red as pretests in October 1975; the CTBS, Level C and the PRI, Level Red as intermediate posttests in May 1976; and the CTBS, Level 1 and the PRI, Level Green as posttests in March 1977. For this group there were fifteen months of instruction between the October 1975 pretest and the March 1977 posttest.

EVALUATION DESIGN

The main purpose of the evaluation was to determine the effect of additional resources on reading achievement in the primary grades. The design required principals to select two above-average teachers for grades one, two, and three and to provide two classes of students at each grade level who were closely matched on ethnic, socio-economic, and ability levels. These classes and their teachers were then randomly assigned to "benefit" and "comparison" groups by the staff of the Division of Research. Teachers remained in their benefit or comparison role during the two-year period, while benefit and comparison classes were advanced intact from Grade 1 and Grade 2 to corresponding benefit and comparison Grade 2 and Grade 3 classes. Only those students having pretests and posttests who remained in the program for the entire two-year period were included in the main evaluation results. Separate analyses were performed for current first-grade students who had been in the program for only five months.

Random assignments were not implemented for nine classes because of medical and administrative problems. Since the randomization between these benefit and comparison classes was not implemented, the nine classes were deleted from the evaluation design before the program began.

Any resource that was typically available to a school was available to the teachers and students in the comparison classes, but they were denied the resources of the Primary Reading Program.

Field operations of the evaluation were accomplished with the assistance of personnel from the local school unit. To control for possible bias in test administration, the reading coordinator from the local school unit administered the CTBS for the benefit and comparison classes. The PRI was a much longer test which was administered over several days. To accomplish this phase of the testing, teachers administered the PRI tests to their own classes under the direction of the local reading coordinator.

Pretesting was done after one month of school (September 30 - October 3, 1975, for the CTBS and October 13-17, 1975, for the PRI). Posttesting after the first year was done approximately seven months later (May 4-5 for the CTBS and May 7-10 for the PRI). Pretesting for the second year was done only with CTBS administrations in the newly formed first grade (September 20 - October 6, 1976) and PRI administrations in the second grade (September 6-17, 1976). Second-year posttesting with the CTBS was done in Grades 1, 2, and 3 and with the PRI in Grades 2 and 3 (February 28 - March 11). Results of the second-year posttests were received from the scorer on April 12, 1977.

Since classes, rather than students, were the units randomly assigned to benefit and comparison groups, the class mean score was used as the unit of analysis for the total experiment. Because classes had been matched by the principals,

analyses were performed on the difference scores between the benefit and comparison classes for the overall evaluation. Expanded scale scores were used in the CTBS analysis while the average number of correct answers was the PRI score analyzed.

EVALUATION RESULTS

CTBS Achievement

Students in the two-year Primary Reading Program scored significantly higher than comparable students in the comparison classes on the CTBS. Primary Reading Program students who were in the benefit class during the first grade and half of the second grade (Grade 1-2) scored 6.2% higher than the comparison classes. Similar students in benefit classes in the second grade and half of the third grade (Grade 2-3) averaged 6.4% higher than corresponding comparison classes. First-grade students who had participated in the benefit classes for five months at the time of posttesting had gains which exceeded the comparison group, but these gains were not statistically significant.

TABLE 1

AVERAGE CTBS STANDARD SCALE SCORES ON TOTAL READING ACHIEVEMENT FOR BENEFIT AND COMPARISON CLASSES

			Benefit			Comparison		
Grade	Number of Classes	Months Between Tests	Pretest	Posttest	Gain	Pretest	Posttest	Gain
1	36	5	199.25	258.74	59.49	199.81	254.84	55.03
1-2	35	15	198.47	322.31	123.84	200.65	317.31	116.66
2-3	32	15	268.20	381.17	112.97	264.99	371.15	106.16

Note: *Analysis of covariance results for the CTBS Standard Scale Scores in the combined Grade 1-2 and Grade 2-3 groups indicated statistically significant differences at the 0.008 level favoring the benefit classes. Difference scores for Grade 1 classes that began the program during the second year had a significance level of 0.23. These first-grade results were not statistically significant.*

PRI Achievement

On the overall evaluation, class scores for the PRI were reported as the average number of items correct. This figure was calculated for each benefit and each comparison class. Differences in the posttest class averages of the benefit and comparison groups were obtained. Since only the CTBS was administered as a pretest to Grade 1-2 students while in the first grade, the PRI posttest

scores were anlyzed for both Grade 1-2 and Grade 2-3 using class differences on the CTBS pretest scores as a covariate. The CTBS pretest differences between benefit and comparison classes were not significant.

At posttesting, the differences in PRI scores averaged 2.8 items for Grade 1-2 and 6.2 items for Grade 2-3. These differences were statistically significant and favored the students in the Primary Reading Program.

TABLE 2

AVERAGE NUMBER OF ITEMS CORRECT ON PRESCRIPTIVE READING INVENTORY

	Number of Classes	Benefit Posttest	Comparison Posttest	Difference
Grade 1-2	35	102.03	99.23	2.80
Grade 2-3	32	112.86	106.66	6.20

NOTE: *Analysis of covariance results for the PRI Total Score using CTBS pretest results as a covariate indicated statistically significant differences for the combined Grade 1-2 and Grade 2-3 groups at the 0.001 level favoring the benefit classes.*

SUMMARY

The Primary Reading Program is presently completing a two-year pilot study designed to improve reading achievement in the primary grades of North Carolina schools. Results of the first year's operation, reported to the State Board of Education in August 1976, showed that students in the Primary Reading Program classes exhibited significantly higher achievement scores on the Comprehensive Tests of Basic Skills (CTBS) and the Prescriptive Reading Inventory (PRI) than comparable students in the comparison classes.

Evaluation continued through the second year for the first and second-grade students who were promoted to the second and third grades. Those students in benefit and comparison classes were continued in the corresponding benefit or comparison class of the succeeding grade. Posttesting in the first week of March 1977 revealed that the Primary Reading Program classes scored significantly higher over the fifteen-month period than their counterparts in the comparison classes on both the CTBS and the PRI. Scores for first-grade students who were in the program for five months (1976-77) were not statistically different from those of comparison group students.

APPENDIX A

Supplementary Tables

TABLE 1

AVERAGE CTBS STANDARD SCALE SCORES ON TOTAL READING ACHIEVEMENT FOR BENEFIT AND COMPARISON CLASSES

			Benefit			Comparison		
Grade	Number of Classes	Months Between Tests	Pretest	Posttest	NTE* Posttest	Pretest	Posttest	NTE* Posttest
1	36	5	199.25	258.74	249	199.81	254.84	249
1-2	35	15	198.47	322.31	306	200.65	317.31	309
2-3	32	15	268.20	381.17	340	264.99	371.15	334

*No Treatment Expectation (NTE) based on pretest national percentile ranking at the beginning of the program.

TABLE 2

AVERAGE GAINS IN CTBS STANDARD SCALE SCORES ON TOTAL READING ACHIEVEMENT
FOR BENEFIT AND COMPARISON CLASSES

Grade	Months Between Tests	Benefit Gain	Comparison Gain	Difference
1	5	59.49	55.03	4.46
1-2	15	123.84	116.66	7.18
2-3	15	112.97	106.16	6.81

TABLE 3

GAIN SCORES OF PRIMARY READING PROGRAM STUDENTS CONTRASTED WITH GAIN SCORES OF SIMILAR STUDENTS IN THE NATIONAL NORM GROUP

	Benefit			Comparison		
Grade	Gain	NTE* Gain	Difference	Gain	NTE* Gain	Difference
1	59.49	49.75	9.74	55.03	49.19	5.84
1-2	123.84	107.53	16.31	116.66	108.35	8.31
2-3	112.97	71.8	41.17	106.16	69.01	37.15

*No Treatment Expectation (NTE) based on pretest national percentile ranking at the beginning of the program.

TABLE 4

AVERAGE GAIN IN CTBS GRADE EQUIVALENT SCORES ON TOTAL READING ACHIEVEMENT FOR BENEFIT AND COMPARISON CLASSES WHEN TESTED AT THE SIXTH MONTH OF THE 1976-77 SCHOOL YEAR

Grade	Number of Classes	Grade Equivalent Months Between Tests	Benefit			Comparison		
			Pretest	Posttest	Gain	Pretest	Posttest	Gain
1	36	5	0.8	1.7	.9	0.9	1.7	.8
1-2	35	15	0.7	2.6	1.9	1.0	2.4	1.4
2-3	32	15	1.8	3.7	1.9	1.8	3.5	1.7

Copies of this document are available from the Division of Research, Department of Public Instruction, Raleigh, North Carolina 27611. You may request additional information by writing or by calling 919 - 733-3300.